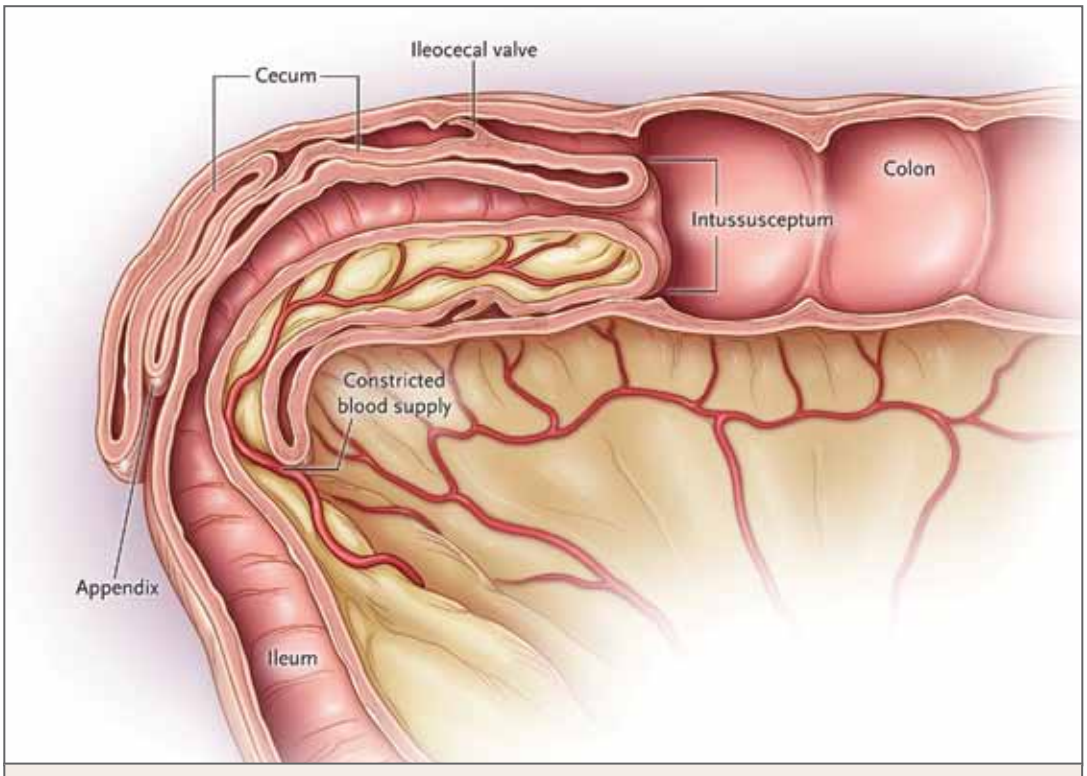

Figure 1. Idiopathic Ileocecal Intussusception.

interpreted by an experienced (pediatric) radiologist, is a better screening test for both intussusception and other intraabdominal processes.

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Since publication of their article, the discussants report no further potential conflict of interest. Dr. Goldstein reports no potential conflicts of interest relevant to this reply.

1. Gilsanz V. Displacement of the appendix in intussusception. AJR Am J Roentgenol 1984;142:407-8.

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Effect of Abuse-Deterrent Formulation of OxyContin

TO THE EDITOR: In August 2010, an abuse-deterrent formulation of the widely abused prescription opioid OxyContin was introduced. The intent was to make OxyContin more difficult to solubilize or crush, thus discouraging abuse through injection and inhalation. We examined the effect of the abuse-deterrent formulation on the abuse of OxyContin and other opioids.

Data were collected quarterly from July 1, 2009, through March 31, 2012, with the use of self-administered surveys that were completed anonymously by independent cohorts of 2566 patients with opioid dependence, as defined by the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition, who were entering treatment programs around the United States and for whom

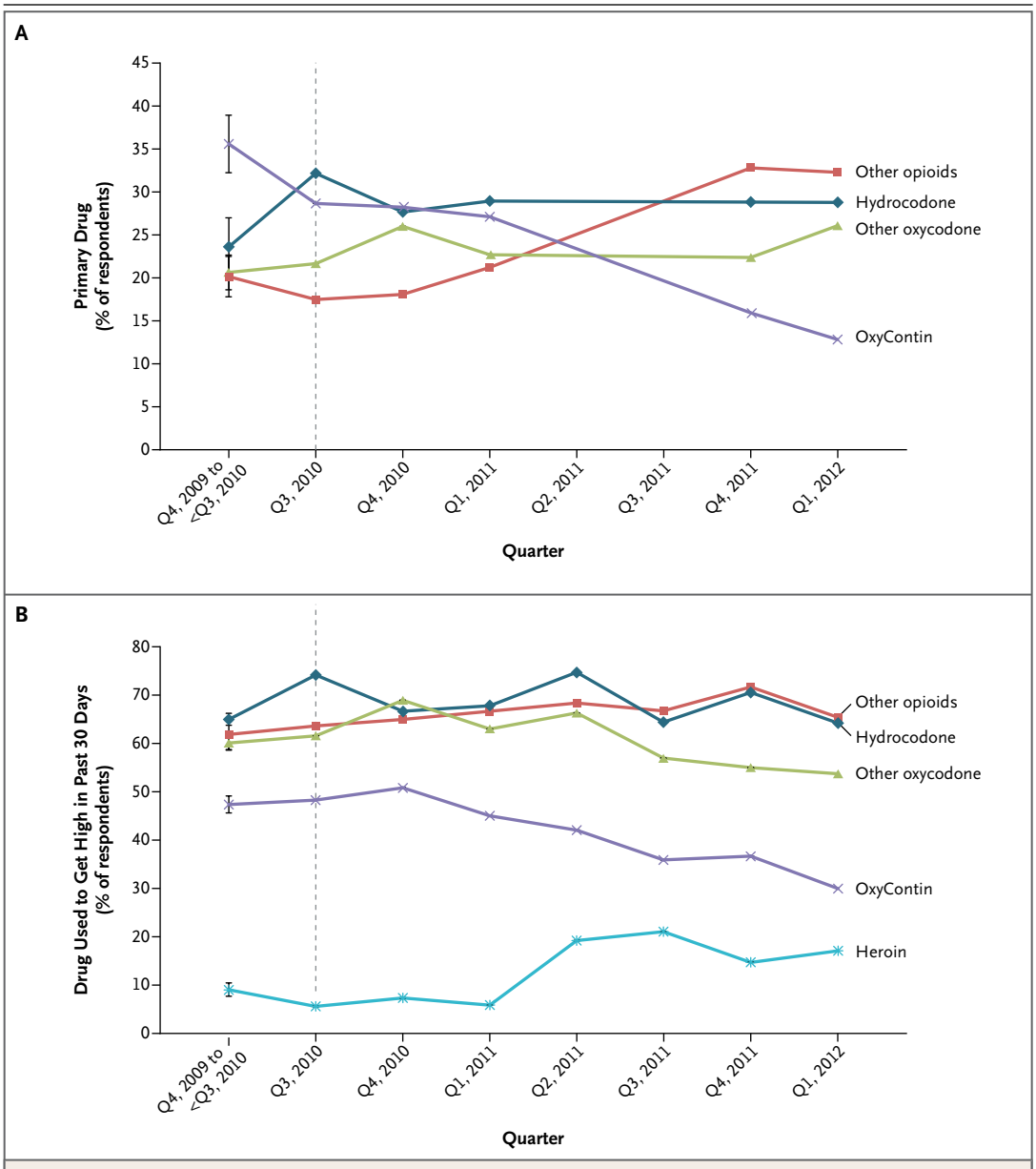

Figure 1. Effect of Abuse-Deterrent OxyContin.

Panel A shows the percentage of respondents in each quarter who selected a specific prescription opioid as their primary drug (used most often and preferred over all others). Respondents could make only one choice. Heroin was not included as a primary drug to limit the population to those who primarily used prescription opiates. Panel B shows the use of opioids to get high at least once in the past 30 days from July 1, 2009, through March 31, 2012. Respondents could select as many drugs as were applicable, and hence the percentages sum to more than 100. In both panels, the dashed vertical line represents the quarter in which the abuse-deterrent formulation of OxyContin was introduced, and the first point the mean (±SE) for the four quarters before the introduction of the abuse-deterrent formulation.

a prescription opioid was the primary drug of abuse (i.e., heroin use was acceptable but could not be the patient's primary drug). Of these patients, 103 agreed to online or telephone interviews to gather qualitative information in order to amplify and interpret findings from the structured national survey.

As shown in Figure 1A, the selection of OxyContin as a primary drug of abuse decreased from 35.6% of respondents before the release of

the abuse-deterrent formulation to just 12.8% 21 months later (P<0.001). Simultaneously, selection of hydrocodone and other oxycodone agents increased slightly, whereas for other opioids, including high-potency fentanyl and hydromorphone, selection rose markedly, from 20.1% to 32.3% (P=0.005). Of all opioids used to "get high in the past 30 days at least once" (Fig. 1B), OxyContin fell from 47.4% of respondents to 30.0% (P<0.001), whereas heroin use nearly doubled.

Interviews with patients who abused both formulations of OxyContin indicated a unanimous preference for the older version. Although 24% found a way to defeat the tamper-resistant properties of the abuse-deterrent formulation, 66% indicated a switch to another opioid, with "heroin" the most common response. These changes appear to be causally linked, as typified by one response: "Most people that I know don't use OxyContin to get high anymore. They have moved on to heroin [because] it is easier to use, much cheaper, and easily available." It is important to note that there was no evidence that OxyContin abusers ceased their drug abuse as a result of the abuse-deterrent formulation. Rather, it appears that they simply shifted their drug of choice.

Our data show that an abuse-deterrent formulation successfully reduced abuse of a specific drug but also generated an unanticipated outcome: replacement of the abuse-deterrent formulation with alternative opioid medications and heroin, a drug that may pose a much greater overall risk to public health than OxyContin. Thus, abuse-deterrent formulations may not be the "magic bullets" that many hoped they would be in solving the growing problem of opioid abuse.

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CORRECTIONS

Case 12-2012: A 10-Month-Old Girl with Vomiting and Episodes of Unresponsiveness (April 19, 2012;366:1527-36). A correction is described in the Correspondence section of this issue of the *Journal* (Case 12-2012: An Infant with Vomiting [July 12, 2012:367:186-7]).

Niacin in Patients with Low HDL Cholesterol Levels Receiving Intensive Statin Therapy (December 15, 2011;365:2255-67). In Table 2 (pages 2262 and 2263), the values listed in the columns labeled "Baseline" were actually from the first of three screening samples specified in the protocol. The values varied from baseline values by no more than 2.5 mg/dl in any mean or median reported in the table; they have been replaced with baseline values online. The article is correct at NEJM.org.

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